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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,344	05/30/2001	Tomoyuki Seki	5077-000052	8478

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EXAMINER

HARPER, HOLLY R

ART UNIT PAPER NUMBER

2879

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,344

Applicant(s)

SEKI ET AL.

Examiner

Holly R. Harper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "a temperature focus region" in Line 21. This area cannot be defined because it has no structural limitations. A temperature focus region is inherent to all discharge lamps using a reflecting mirror.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the connection portion" in Line 25 and 26. There is insufficient antecedent basis for this limitation in the claim. Two distinct connections (the sealing portions to the foils and the foils to the leads) are mentioned. Both connections are said to be electrically connected and neither is specified as a connection portion.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Seki et al. (USPN 6,084,352) hereinafter "Seki."

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In regard to claim 1, the Seki reference discloses a discharge lamp with a bulb filled with a gas (Column 2, Line 3). A starting rare gas, mercury, and metal halides are used as a light-emitting substance (Column 3, Line 42). A pair of electrodes are disposed each opposing the other in the discharge tube and are electrically connected to the molybdenum foils. The molybdenum foils are connected to external lead rods (Column 3, Lines 40-48). Sealing portions are found between the molybdenum foils and the electrodes (Figure 2). Nitrided aluminum film is formed on the surface of both the sealing portions (Column 3, Lines 56-57). The film is made of nitrided aluminum, which is more reflective than the quartz used to make the sealing portions (Column 3, Lines 31-32).

In regard to claim 2, the Seki reference discloses a reflective film made of aluminum nitride and a sealing portion made of quartz. The limitation that the film has a heat radiation rate larger than that of the material constituting the sealing portion refers to an inherent property of the materials. The aluminum nitride film has a heat radiation rate larger than that of the quartz.

In regard to claim 3, the Seki reference discloses a connection between the foil and the lead (Column 3, Lines 46-47). The Examiner notes that the Applicant is claiming the product of a discharge lamp including a method (i.e. a process) of welding the lead and foil, consequently, claim 3 is considered a "product-by-process" claim. In spite of the fact that a product-by-process claim may recite only process limitations, it is the product and not the recited process that is covered by the claim. Further, patentability of a claim to a product does not rest merely on the difference in the method by which the product is made. Rather, is the product itself which must be new and not obvious. (see MPEP 2113).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 5, 7, 8, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al. (USPN 6,294,870) hereinafter "Kawashima" in view of Seki et al. (USPN 6,084,352) hereinafter "Seki" in further view of Shimizu (USPN 5,996,250).

In regard to claims 4 and 5, the Kawashima reference discloses a discharge lamp with a discharge casing, or bulb, (Column 3, Line 32). The discharge casing is filled with mercury, a rare gas, and a halide of luminous metal (Column 3, Lines 37-38). A sealed molybdenum foil is airtightly buried in each of the two sealed portions (Column 3, Lines 35-36). The anode and cathode both have an electrode shaft, which is inserted in the sealed portion and welded to an end of the sealed molybdenum foil (Figure 13). The external lead wire is welded to the other end of the sealed molybdenum foil (Column 3, Lines 40-52). One of the pair of sealing portions is disposed on an emission direction side in the reflecting mirror (Figure 13). Thermal rays projected to the irradiated surface can be reduced by employing a mirror whose reflecting surface is capable of reflecting visible light and transmitting thermal rays (Column 11, Lines 58-61). The Kawashima reference does not disclose the use of a reflective film on the surface of the sealing portion. The Seki reference teaches that a reflective film made of aluminum nitride is formed on a sealing portion (Column 3, Lines 56-57) made of quartz (Column 3, Lines 31-32).

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The film made of aluminum nitride is more reflective than the sealing portion made of quartz.

The limitation that the film has a heat radiation rate larger than that of the material constituting the sealing portion refers to an inherent property of the materials. The aluminum nitride film has a high heat conductivity and high emissivity and helps to keep the temperatures of the sealing portions at 350° or lower (Column 5, Lines 58-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a reflecting film on the sealing portion of the discharge lamp, as taught by Seki, to keep the temperature of the sealing portion at 350° or lower.

In regard to claim 7, the anode and cathode both have an electrode shaft, which is inserted in the sealed portion and welded to an end of the sealed molybdenum foil. The external lead wire is welded to the other end of the sealed molybdenum foil (Column 3, Lines 40-52).

In regard to claim 8, the Kawahsima discloses a discharge lamp with a reflecting mirror (Figure 12) and a front cover that functions as a color filter (Column 12, Line 20). Thermal rays projected to the irradiated surface can be reduced by employing a mirror whose reflecting surface is capable of reflecting visible light and transmitting thermal rays (Column 11, Lines 58-61). A film on the front cover can be adapted to reflect visible light and transmit thermal rays (Column 12, Lines 15-19).

In regard to claim 9, the Kawashima reference discloses that a discharge lamp is used as a light source for a liquid crystal projector (Column 1, Line 41-43).

In regard to claim 10, the Kawashima reference does not disclose all of the components of an optical system. The Shimizu reference teaches that using a digital micro-mirror device in projection systems can significantly improve light efficiency (Column 7, Lines 2-3). It would

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have been obvious to one of ordinary skill in the art at the time the invention was made to include a digital micro-mirror device in the optical system, as taught by Shimizu, to improve light efficiency.

7. Claims 6, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al. (USPN 6,294,870) hereinafter "Kawashima" in view of Seki et al. (USPN 6,084,352) hereinafter "Seki" in further view of Shimizu (USPN 5,996,250).

In regard to claim 6, the Kawashima reference discloses a discharge lamp with a discharge casing, or bulb, (Column 3, Line 32). The discharge casing is filled with mercury, a rare gas, and a halide of luminous metal (Column 3, Lines 37-38). A sealed molybdenum foil is airtightly buried in each of the two sealed portions (Column 3, Lines 35-36). The anode and cathode both have an electrode shaft, which is inserted in the sealed portion and welded to an end of the sealed molybdenum foil (Figure 13). The external lead wire is welded to the other end of the sealed molybdenum foil (Column 3, Lines 40-52). One of the pair of sealing portions is disposed on an emission direction side in the reflecting mirror (Figure 13). Thermal rays projected to the irradiated surface can be reduced by employing a mirror whose reflecting surface is capable of reflecting visible light and transmitting thermal rays (Column 11, Lines 58-61). The Kawashima reference does not disclose that one of the external leads and metal foils are connected in a position outside the temperature focus region. The Seki reference teaches that the sealing portions are extremely lengthened so as to locate the molybdenum foils at the ends of the sealing portions away from the light-emitting portion, (Column 1, Lines 43-45) and intrinsically the temperature focus region along the tube axis. This is done to prevent the foil from being oxidized (Column 1, Lines 31-32). It would have been obvious to one of ordinary skill in the art

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at the time the invention was made to locate the foils at the ends of the sealing portions away from the light-emitting portions, as taught by Seki, to decrease the foil from being oxidized.

In regard to claim 11, the Kawashima reference discloses that a discharge lamp is used as a light source for a liquid crystal projector (Column 1, Line 41-43).


In regard to claim 12, the Kawashima reference does not disclose all of the components of an optical system. The Shimizu reference teaches that using a digital micro-mirror device in projection systems can significantly improve light efficiency (Column 7, Lines 2-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a digital micro-mirror device in the optical system, as taught by Shimizu, to improve light efficiency.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Harper whose telephone number is (703) 305-7908. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Holly Harper
Patent Examiner
Art Unit 2879


ASHOK PATEL
PRIMARY EXAMINER